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Research ethics: Assuring anonymity at the individual level may not be sufficient to protect research participants from harm

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The recent special edition of Biological Conservation on Conservation Crime provided an opportunity to reflect on the growing use of specialised methods for asking sensitive questions in conservation. Such tools, including the Randomised Response Technique (RRT), are increasingly used to investigate rule breaking in conservation for example, hunting of protected species, use of illegal fishing gear, orother wildlife crimes. Expanding the anonymity principle of social surveys, where information which could be used to identify a single person is not collected, or is encoded or removed to protect individual privacy, these specialized methods provide research participants with levels of protection greater than simple guarantees of anonymity by replacing a proportion of responses with "noise" using a randomising device with a known distribution. For example,when studying illegal hunting, a stack of cards may be provided to the participant, halfdisplaying a numberfrom a known probability distributionand half blank. A card is selected in private and never revealed to the researcher, the respondent then either reads out the number on the card or, if a blank card is selected, answers asensitive question e.g. *'How many x did you kill?'*.Thus, truthful answers cannot be distinguished from those prescribed by the randomising device, but the researcher can obtain an unbiased estimate of the mean prevalence of a sensitive behaviour in the population by correcting for the introduced noise.These approaches increase respondents' willingness to answer honestly improving validity of data on sensitive subjects, and crucially, make it impossible to directly link incriminating data to an individual (Nuno and St John 2014).

The latter is important from a research ethics perspective. Ethics guidelines stipulate that researchers must secure free, prior informed consent from participants and emphasise that *'...researchers should not harm the safety, dignity or privacy of the people with whom they work… or who might reasonably be thought to be affected by their research'*(Code of Ethics of the American Anthropological Association 2009). At the individual respondent level, specialised questioning techniques make a useful contribution as sensitive information is never linked to an individual. However, this does not automatically mean that no harm will come to respondents or others, for example those residing in the same locality, as a consequence of studies deploying such methods. A number of recent studies (some co-authored by some of us) have used RRT to protect individuals, but have reported statistics such as the proportion of households in a named village involved in illegal hunting (Conteh et al 2015) or the proportion in an area who have consumed protected species (Randriamamonjy et al 2015). It is easy to see how such data could beused by a management authority in a way which harms those in the study areas, for example if villages are targeted foranti-poaching enforcement.

A number of regulations from governments and funding bodies require research institutions to demonstrate their ability to review and monitor research with ethical implications. This is most commonly achieved by establishing research ethics committees mandated to protect the rights and well-being of research participants, ensure lawful research practices, and to manage and mitigate the risks arising from research. However research submitted to conservation journals comes from diverse institutions governed by different rules and standards, and some, especially research done within NGO settings or in institutions with

limited awareness of social research ethics, may not have clear guidelines on conducting ethically robust research involving human participants. Conservation journals therefore have a critical role to play in encouraging best practice with respect to conducting ethical research and there are a number of steps that they can take to promote ethical practice: (1) provide ethics guidelines for conducting research with human participants and/or their data; (2) require an ethics statement in articles containing social data; (3) ensure submitted papers reporting research on human subjects are scrutinized with the same rigour as those involving animals to ensure papers with dubious ethical standards are not accepted (this can include explicitly requesting reviewers to consider the ethical implications of submitted manuscripts).

Those of us conducting scholarly research on illegal or otherwise sensitive behaviours, have a responsibility to safeguard our research participants. The result of the research may well be that enforcement of environmental rules is increased, but we should ensure that those involved in our research are not disproportionally impacted by the increased enforcement. There are clearly difficult decisions to be made - research methods must be transparent and sometimes information about the location of the research is important for the interpretation of the results. There is no simple answer about where the balance lies between transparency in research and protecting participants. However it is clear that the conservation science community, and conservation journals, need to think harder about this issue than perhaps has been happening so far.

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